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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,044	11/21/2008	Heiko Pelzer	NL03 1531 US1	6968
65913	7590	11/12/2010	EXAMINER	
NXP, B.V. NXP INTELLECTUAL PROPERTY & LICENSING M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			SAN MARTIN, JAYDI A	
			ART UNIT	PAPER NUMBER
			2837	
			NOTIFICATION DATE	DELIVERY MODE
			11/12/2010	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/584,044	<b>Applicant(s)</b> PELZER ET AL.	
	<b>Examiner</b> J. SanMartin	<b>Art Unit</b> 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/21/06</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Specification*

1. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### *Drawings*

2. The drawings are objected to because:
- Figures **3** and **7** are **too dark** and details are not visible; and
  - Claim 3 requires a bending limitation and such feature is not shown in the drawings.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended”. If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

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be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-6 and 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Hyman (US 6504118).

Regarding claim 1, Hyman discloses an electronic device with a micro-electromechanical switch (figure 13a-13c), comprising: a piezoelectric element (324, 374) with a piezoelectric layer (324, 374) located between a first (342, 337, 392) and a second electrode layer (315, 320, 365), with at least one electrode being located in each of said electrode layers (first and second electrodes are located on both sides of the piezoelectric layer); a first and a second MEMS electrode (320, 322), said first MEMS electrode (320) being located on a surface of the piezoelectric element (324) and said second MEMS electrode (322)-being located on the surface of a substrate (302), so that the first MEMS electrode (320) moves away from and/or towards the second MEMS electrode (322) under the application of an actuating voltage to the piezoelectric element characterized in that at least one of the electrode layers is structured into electrodes (note the first electrode (top electrode is made of elements 327, 325 and 392) while defining a displacement area in the piezoelectric element, in which displacement area the first MEMS electrode is located and which displacement area is, under the application of at least one

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actuating voltage to the electrodes, capable of strong displacement away from and/or towards the substrate in relation to the rest of the piezoelectric element

Regarding claim 2, Hyman discloses polarized piezoelectric layer (324) and the electrodes are capable of causing a local contraction of the piezoelectric layer.

Regarding claim 3, the claimed limitation, i.e. “the piezoelectric layer curves to the left on one side of the displacement area and to the right on an opposite side” is considered to be met by the prior art since the shown structure is identical to the claimed invention. However, this is not a structural limitation and therefore the limitation was given little patentable weight. On the other hand, it should be noted that the limitation is not shown in the drawings (refer to the objection to the drawings, the feature must be shown in the drawings).

Regarding claim 4, the piezoelectric element is clamped to mechanical supports on a first and an opposite second side (fixed to base 301, refer to figures 13a-13c).

Regarding claim 5, the electrodes are defined symmetrically around the displacement area.

Regarding claim 6, each of the first and the second electrode layers contains at least two electrodes.

Regarding claim 9, the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

Regarding claim 10, the actuating voltages are so applied to the electrodes that the piezoelectric layer expands and contracts.

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Regarding claim 11, the claimed limitation is directed to the method of driving the device. Since it is not a structural limitation, the Examiner gave little patentable weight to the limitation.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hyman.

Regarding claims 7 and 8, Hyman discloses the claimed invention as explained above, but fails to disclose the bottom electrode as a continuous electrode.

It would have been an obvious matter of design choice to use a continuous electrode, since the applicant has not disclosed that using a continuous electrode solves any problem or is for a particular reason. It appears that the claimed invention would perform equally well with segmented electrodes as disclosed by Hyman.

It would have obvious to one ordinary skill in the art to use a continuous electrode as necessitated by the specific requirements of a particular application.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. San Martin whose telephone number is 571-272-2018. The examiner can normally be reached on M-Th 9-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Benson can be reached on 571-272-2227. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jaydi SanMartin/  
Primary Examiner  
Art Unit 2837

November 8, 2010